

## Meeting Notes - August 18, 2016

### Project: Bremerton Gas Works Superfund Site

#### Attendees:

Bill Ryan, Rene Fuentes, EPA

Susan Moore, CH2M

Kalle Godel (via video) and Jim Abrahamson (via phone), Cascade Natural Gas Corp./Montana-Dakota Utilities Co.

Jeremy Porter and Carla Brock, Aspect Consulting

Nathan Soccorsy, Anchor QEA

#### Attachments:

- **Revised EPA Comments on the Revised Bremerton Gas Works RI/FS Work Plan– 8/10/16**
- **Conceptual Upland Investigation Plan (Meeting Sketch)**

#### Meeting Objectives:

- 1) Discuss EPA's initial written response to Cascade's revised draft Work Plan (EPA to provide additional comments regarding the revised draft Work Plan, including comments regarding the Response-to-Comments Table and the marine investigation, after the meeting)
- 2) Answer questions about EPA comments
- 3) Discuss and come to agreement on the structure and sequencing of the uplands investigation of the Site
- 4) Document agreements reached
- 5) Identify next steps

#### Introductory and General Comments

EPA made introductory and general comments that included the following key points:

- Some comments did not appear to be addressed as noted in the Response-to-Comment Table. These items need to be addressed as indicated.  
*Revisions addressing these comments were provided to EPA in an email dated 9/28/2016. The revised Work Plan incorporates these revisions.*
- The revised draft Work Plan does not adequately describe the process for moving from source identification through all stages of the work. The Work Plan should limit downtime between different elements of the investigation and not include extended stopping points for decision making.  
*The work plan has been revised to include additional detail to allow field leads to make decisions in the field. A field communication plan has been added which describes how data will be communicated. Investigation elements requiring EPA input, such as placement of wells, will be determined quickly through this process without formal deliverables or extended review periods.*
- The COPC screening memorandum should be removed, and all COPCs should be retained through the Phase 1 data acquisition. The COPC list may be narrowed after sufficient data is collected, but EPA does not believe that it is appropriate in this phase of the project.  
*In the revised Work Plan the COPC screening memorandum has been removed, and all COPCs are retained during Phase 1 data acquisition.*
- The final Work Plan should replace phrases such as “in consultation with EPA...” with more detail to describe the decision making process. The work is fundamentally Cascade's to

implement. Although EPA intends on providing some oversight of field activities, the Work Plan should not assume EPA or CH2M staff will always be on site.

*These phrases have been removed and additional detail on field decision making has been added.*

- The limits of the investigation should not be limited by equipment technology; alternative tools should be available if needed.

*Borings that hit refusal due to dense soils will be readvanced using alternative drilling methodologies, such as sonic or hollow-stem auger, if needed to achieve the objectives of the boring. Limited-access direct-push borings will be used in and around structures where trenches and test pits are not feasible.*

### **Upland Investigation Comment Review**

During this portion of the meeting, the group discussed how the upland approach should be modified. The key points of the discussion are summarized below:

- **Discussion of the Work Plan as providing a prescriptive sampling scope versus one that depends on field or team decision making.**

- The process and logic needs to be explicitly defined in the Work Plan but hypothetical locations do not need to be included. Logical starting points such as the extent of geophysical surveys and known test pit targets should be included as a starting point. However, the Work Plan should not include maps showing locations of soil borings or wells that will depend on the results of the Source Investigation.

*Decision making logic is included; exploration maps will not show explorations that will depend on future information gathering.*

- Field coordinators will then make decisions in the field in accordance with the logic and process defined in the Work Plan. Field coordinators (Upland – Carla; Marine – Nathan) must be very familiar with the Work Plan and its decision logic.

*Field coordinators will lead field efforts and have been heavily involved in Work Plan development.*

- Rigorous communication will be required to inform EPA of progress to ensure the investigation is well coordinated. Specific communication plan elements discussed include:

- A website (does not need to be password protected, but should have a non-searchable URL) that provides a location for daily posting photos, field reports, maps, and sketches (e.g., cross-section representations of field observations) is likely a useful tool.
- A standard weekly call for the project team is recommended.

*A summary of the communication plan including these elements has been added to Section 9. A detailed field communication plan has been added to the Upland and Marine SQAPPs.*

- **Clarification on how Source Areas are defined.**

- Sources are those that exhibit gross contamination, such as tar, non-aqueous phase liquids (NAPL) or materials coated with or saturated with NAPL. Low to moderate indicators of contamination, including moderate odors or PID detections or minor staining are not necessarily 'Sources'.
- Field leads' best professional judgement will be required to make these determinations.

*The definition of 'Sources', and the field leads' roles in determining source material, has been added to the work plan.*

- **ISM implementation.**

- EPA indicated that ISM methodology should be the default approach for characterization outside of Source Areas and should be detailed in the Work Plan. If it is determined at a later time that other investigative methods outside of Source Areas are preferred (e.g., discrete sampling), the Work Plan may be amended. It is not the intent of the Work Plan to ‘lock in’ a particular sampling approach, but sufficient detail needs to be provided for the default approach such that the work can continue without substantial delays for preparing and reviewing a Work Plan addendum. Additional language clarifying the potential for Work Plan modifications is included in ‘Agreements Reached’ below.  
*Clarifying language regarding work plan modification has been added to Section 1. ISM sampling has been included as the default approach to characterization of soil outside of Source Areas, but as indicated in the Work Plan the applicability and details of ISM will be reevaluated after Source Areas.*
- The decision units will be based upon the results of the Source Investigation. Proposed modifications to EPA’s 8/12/2016 comments are attached.  
*Work Plan has been amended based on modified comments. Refer to the response to modified comments.*
- **Upland Investigation work flow (see attached conceptual sketch developed during meeting)**
  - Step 1 – Geophysical Surveys
  - Step 2A – Source Investigation
    - Trenches and test pits (as identified on source investigation map, modified based on geophysical survey results). If a Source is found:
      - Extend trench length if necessary to determine lateral limits of source;
      - If the Source extends beyond the width of the trench, complete a cross-trench at location of greatest contamination to determine lateral limits of the Source in the perpendicular direction;
      - Complete approximately 2 borings<sup>1</sup> adjacent<sup>2</sup> to area of greatest contamination to determine vertical limits of the Source. If direct-push drilling does not identify vertical extent due to refusal, alternative drilling methodologies will be employed.
  - Step 2B (can be concurrent with 2A) - Deep soil borings and well installation (minimum 3 wells) to determine lithology and groundwater flow direction.<sup>3</sup>
  - Step 3A - Source Area Well Installation
    - Complete a transect of approximately four borings downgradient of each ‘general’ source area (e.g., main process area, ravine, tar pit).
    - Install one monitoring well along each transect. Well location to be based on boring data.<sup>4</sup>
  - Step 3B (can be concurrent with 3A) – ISM sampling outside source areas

<sup>1</sup> Note that the timing of borings will depend on rig availability and the schedule for other field activities at the Site. EPA expects that there will not be a significant delay to the field program. Additional trenches may be advanced before completing borings for a particular trench. *Field sequencing to minimize delays is described in the Work Plan, Section 5.5.1.2.1.*

<sup>2</sup> Source borings would be located to drill close to source material, but not directly through it if possible, to minimize potential for carry down. *This objective has been added to Section 5.5.1.2.1.*

<sup>3</sup> The Work Plan should clarify the purpose of these explorations and note that they are not necessarily for groundwater monitoring of contamination. *The purpose of these borings has been included in Section 5.5.1.4.*

<sup>4</sup> EPA expects that there will not a significant delay between advancing soil borings and installing the wells. Expedited laboratory turnaround may be used if needed; however, such need will depend on the sequencing and scheduling of other field activities. Modified language to EPA’s 8/10/2016 response is attached. *Field sequencing to minimize delays, and use of expedited lab analysis if needed, is described in Section 5.5.1.3 of the Work Plan.*

- The objective of ISM would be to bound the lateral extent of contamination outside Source Areas
- Decision Units to be determined based on results of Source Investigation.
- Step 4 – ‘Boundary’ Well Installation
  - Install wells cross- and up-gradient of source areas to bound lateral extent of groundwater contamination
  - Install wells below contaminated groundwater zone(s) down-gradient of source areas to bound vertical extent of groundwater contamination.

*This work flow is described in the revised work plan, Section 5.5.1.*

**Summary of agreements reached:**

- It was agreed that the *EPA Initial Response to the Revised Bremerton Gas Works RI/FS Work Plan – 8/10/2016* would be annotated with marginal notes/comment bubbles to show where agreements (described below) were reached.
- The second sentence under “Outside source zones” number 1 can be struck from the comment letter and replaced with “DUs to be decided based on the delineation of the Source Areas.”

*Modified language has been added to Section 5.5.1.4.2 of the Work Plan.*

- Adaptive management text to be included in Section 1 of the Work Plan: “This Work Plan has been produced based on the current CSM which was developed using available information. Based on data collected throughout this investigation, the Cascade and EPA project managers may agree that elements of the Work Plan may change. Both the change and method of documentation will be approved by EPA.”

*To address this comment, the following text has been included in Section 1:*

*“This Work Plan has been produced based on the current CSM which was developed using available information. The Cascade and EPA project teams may agree that elements of this Work Plan should change based on data collected in the course of the RI. EPA must approve all changes to this Work Plan.”*

- Regarding expedited lab turnaround – change comment text from “will” to “may” be needed. *Possibility of using expedited lab turnaround if needed to avoid significant schedule delays has been added to Section 5.5.1.3 of the Work Plan.*
- Communication tools. A detailed communication plan will be included in the Work Plan, which will include evaluation, development and implementation of an easily accessible source for near real-time field progress and data sharing. The Work Plan does not need to specify the tool, only that one will be implemented, but it must be tested to ensure usability by team members. *Field communication plans have been added to the SQAPPs and summarized in Section 9 of the Work Plan.*

**Next steps:**

- EPA expects to provide complete comments regarding the revised draft Work Plan by the week of August 29<sup>th</sup>.
- EPA will provide a list of comments that were not addressed in the revised draft Work Plan by 8/22/2016.